

In the claims:

The following claims will replace all prior versions of claims in this application:

1-6. (Canceled).

7. (Currently Amended) A computer-implemented method of automatically generating a mathematical word problem assessment item, the method comprising:

receiving one or more inputs from a user;

generating one or more variables based on the one or more inputs;

determining one or more relationships between at least two of the variables; and

generating and outputting an assessment item to the user based on the one or more relationships,

wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

8. (Previously Presented) The method of claim 7 wherein the one or more relationships comprise relationships based on one or more of word order, word choice, word format, sentence structure, grammar, language.

9. (Canceled)

10. (Currently Amended) A computer-implemented method of automatically generating a mathematical word problem assessment item, the method comprising:

receiving one or more inputs pertaining to the format of an assessment item, wherein the format of the assessment item comprises at least one event;

selecting one or more variables for use in the assessment item, wherein each variable is assigned to an event;

determining a relationship between variables assigned to an event;

determining a format for the assessment item; and

generating and outputting an assessment item to a user based on at least the format for the assessment item and the relationship between variables assigned to the at least one event,

wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

11. (Canceled).

12. (Original) The method of claim 10 wherein determining a relationship for the variables assigned to each event comprises one or more of the following:

determining a variable for which to solve for each event;

determining an answer for each event;

determining a value for one or more variables; and

determining a variable format.

13. (Original) The method of claim 10 wherein determining a format for the assessment item comprises:

determining a problem format having one or more sections; and

determining content to place within each section.

14. (Currently Amended) The method of claim 10 wherein generating an assessment item comprises one or more of the following:

~~selecting a sentence structure for each sentence in the assessment item;~~

selecting identification types for one or more of the variables; and

determining a numerical format for each of the one or more variables; ~~and~~

~~determining a verb tense to use for each event.~~

15. (Previously Presented) The method of claim 14 wherein selecting identification types comprises at least one of:

determining to identify a variable denoting a person generically,

determining to identify a variable denoting an object by using a label,
determining to identify a variable denoting an object by using a description of the object.

16-19. (Canceled)

20. (Currently Amended) A system for automatically generating a mathematical word problem assessment item, the system comprising:
a processor; and
a computer-readable storage medium operably connected to the processor, wherein the computer-readable storage medium contains one or more programming instructions for performing a method of automatically generating an assessment item, the method comprising:
receiving one or more inputs from a user,
generating one or more variables based on the one or more inputs,
determining one or more relationships between at least two of the variables, and
generating and outputting an assessment item based on the one or more variables and the one or more relationships,
wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

21. (Currently Amended) A system for automatically generating a mathematical word problem assessment item, the system comprising:
a processor; and
a computer-readable storage medium operably connected to the processor, wherein the computer-readable storage medium contains one or more programming instructions for performing a method of automatically generating an assessment item, the method comprising:
receiving one or more inputs pertaining to the format of an assessment item,
wherein the format of the assessment item comprises at least one event,

selecting one or more variables for use in the assessment item, wherein each variable is assigned to an event,
determining a relationship between variables assigned to an event,
determining a format for the assessment item, and
generating and outputting an assessment item based on at least the format for the assessment item and the relationship between variables assigned to the at least one event,
wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

22. (Currently Amended) A computer-implemented method of automatically generating a mathematical word problem assessment item, the method comprising:

receiving one or more input parameters;
generating a document structure based on the one or more input parameters;
producing a logical schema using the document structure; and
generating and outputting an assessment item based on the logical schema,
wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

23. (Original) The method of claim 22 wherein generating a document structure comprises:

building a mental model; and
outlining the document structure based on the mental model.

24. (Original) The method of claim 23 wherein building a mental model comprises:

selecting one or more semantic frames;
generating a list of one or more events; and
binding one or more variables across the one or more events.

25. (Original) The method of claim 23 wherein outlining the document structure comprises:

generating one or more sentences for the mental model;

determining a function for each sentence; and

determining information to express in each sentence.

26-27. (Canceled)

28. (Previously Presented) The method of claim 22 wherein the document structure includes one or more of the following:

one or more variables;

one or more values for at least one of the variables;

a mental model structure; and

an outline of a sequence of one or more sentences for the assessment item.

29. (Original) The method of claim 22 wherein producing a logical schema comprises:
outlining a sentence structure for one or more sentences; and
determining an information format for each sentence.

30. (Original) The method of claim 29 wherein determining an information format comprises one or more of the following:

determining a verb type for each sentence;

determining an ordering of one or more elements for each sentence; and

determining one or more vocabulary sets to use for each element.

31-32. (Canceled)

33. (Original) The method of claim 22 wherein generating an assessment item comprises:
parsing the logical schema;

annotating the parsed logical schema with grammatical information;

determining words and word forms based on the grammatical information; and

outputting text representing the assessment item.

34. (Canceled)

35. (Currently Amended) A computer-implemented method of automatically generating a mathematical word problem assessment item, the method comprising:

defining one or more semantic frames;

assigning one or more mental model structure variables;

defining one or more identity variables for a mental model structure;

determining a task-relevant problem structure;

defining a document format;

determining language variations including selecting a referent identification type for each of one or more participants; and

generating and outputting an assessment item to a user based on the task-relevant problem structure, the document format, and the language variations,

wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

36. (Original) The method of claim 35 wherein assigning one or more mental model structure variables comprises defining one or more of the following:

one or more events;

one or more participant types; and

an event type for each event.

37. (Original) The method of claim 36 wherein determining a task-relevant problem structure comprises:

determining a variable for which to solve for each event;

determining an answer for each event; and

determining one or more values for each variable.

38-39. (Canceled)

40. (Currently Amended) A system for automatically generating a mathematical word problem assessment item, the system comprising:

a processor; and

a computer-readable storage medium operably connected to the processor, wherein the computer-readable storage medium contains one or more programming instructions for performing a method of automatically generating an assessment item, the method comprising:

- receiving one or more input parameters,
- generating a document structure based on the one or more input parameters,
- producing a logical schema from the document structure, and
- generating and outputting an assessment item from the logical schema,

wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.

41. (Currently Amended) A system for automatically generating a mathematical word problem assessment item, the system comprising:

a processor; and

a computer-readable storage medium operably connected to the processor, wherein the computer-readable storage medium contains one or more programming instructions for performing a method of automatically generating an assessment item, the method comprising:

- defining one or more semantic frames;
- assigning one or more mental model structure variables,
- defining one or more identity variables for a mental model structure,
- determining a task-relevant problem structure,
- defining a document format,
- determining language variations including selecting a referent identification type for each of one or more participants; and

generating and outputting an assessment item based on the task-relevant problem structure, the document format, and the language variations, wherein the assessment item includes at least one of: a distance-rate-time problem, a fuel efficiency problem, an interest rate computation problem, a taxation problem, a production problem, a physics problem.